

Vitamin B₁ Still in Test Stage

By Walter E. Langton
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AT THE suggestion of a medical friend the writer decided to investigate the use of vitamin B₁ in connection with turf culture. This was about a year and a half ago. Extensive investigation of this particular vitamin substance was being carried on at the nearby California Institute of Technology, so at my friend's request a visit was made to the school and a sample was obtained with which to start a few experiments.

Fortunately, the San Gabriel Country Club possessed a very fine "subject" in a two-year-old turf nursery. Its quality would not register much higher than zero, for it had suffered the vicissitudes of having been almost completely neglected, and any change for the better would be noticeable immediately. The sample of vitamin B₁ we had obtained from Cal-Tech weighed one-hundredth of a gram. This tiny amount was divided into pieces no larger than the head of a pin and each was placed in a glass tube with 20 drops of water. One drop of this stock solution was used to permeate a gallon of water to be sprayed on the turf. While this might seem to be an absurdly small amount of vitamin to treat such a comparatively large volume of water, these proportions were determined by the Cal-Tech scientists to be correct. It can well be imagined that if the use of this material ever becomes general in turf culture, the greenkeeper who has become conditioned to dealing in wheel barrow loads or cubic yards of material will have to readjust his technique.

B₁ Applied Seven Times

A piece of turf 6 ft. square was staked out on September 26 at 10 a.m. The ground temperature was 75° F. and the atmosphere 90° F. Because the humidity at the time of the experiment was extremely low, it was easy to make a fairly accurate determination of the amount of water applied. The control of moisture in the use of this process is very important because vitamin B₁ is extremely soluble and can be easily leached out of the surface soil. Once a week for seven weeks the experimental plot received 3 gallons of the vitamin B₁ solution previously described. In other words, during the

time of the experiment the test plot received 21 gallons of water containing 21 drops of the stock solution.

After four or five treatments the plot had not improved or changed in any visible manner in relation to the rest of the nursery. To the whole of the nursery, including the test plot (about 3,500 sq. ft. altogether), was applied 50 lbs. of 4-8-2 accompanied by a yard of good compost. All of the turf responded immediately. But—and this was after six applications of vitamin B₁ solution—there was no apparent difference in quality or texture of turf between the experimental plot and the control as represented by the remainder of the nursery.

Test Patch Stays Green

During November, seven weeks or seven treatments after the beginning of the test, low temperatures, for San Gabriel, were experienced, the thermometer registering 28° F. As a result the control section of the nursery turned slightly brown, but the test patch remained beautifully green. Furthermore, the color held until the arrival of heavy rains five weeks later. Whether or not it was the vitamin B₁ that was responsible for the color and its retention, or whether it was the additional 21 gallons of water given to the experimental area during what may have been a critical period, has not been ascertained. The fact remains that after the cold spell the plot which received the vitamin treatment was superior in at least appearance to the remainder of the nursery, as can be testified by a number of very competent greenkeepers who were interested observers.

Had it been known that this beneficial result would not be duplicated (until the present time, at least) this observable effect would have received closer scrutiny. Since that time a number of experiments have been made on Southern California golf courses with vitamin B₁, but with no apparent benefit.

Such studies as have been carried on by local greenkeepers have been too incomplete to recommend vitamin B₁, as a means to improve turf culture. The lack of beneficial results may be due to improper application and control, a condi-

A great radio stunt that might be worked by other pros on their local stations is being conducted over NBC at Chicago. Pros Don Sharpless and C. C. Campbell are teaching radio comedian Ransom Sherman. Only a bit of the instruction has gone out over the air but the idea's a natural for a continuity on a golf program. Sherman bet Chick Evans that Sherman could step on a golf course for the first time and break 100. June 15 is to be the day.

Sherman's schooling is restricted to indoor nets and stop-and-sockatoriums. If Sherman does bust the century, Chick will have to wheel him around the 18 holes in a wheelbarrow. If he doesn't, he wheels Chick the route.



tion which may be corrected by future experiment, but so far as results on Southern California golf courses are concerned at present, this very complex material is far from the answer to a greenkeeper's prayer. If, with proper application and control, it were demonstrated that this much-heralded substance improved root development and food assimilation to a profitable extent, it probably would find only a limited application on golf courses because of the apparent length of time it takes to be effective; that is, of course, judging by its unique performance at San Gabriel. In some Northern and Eastern golf courses the annual growing season is limited to as little as 90 days, which would hardly justify the use of such a slow-acting stimulant. Where short seasons are the rule, greenkeepers must produce quick and positive response because golfers and football alumni are equally intolerant of an argument which professes that while the situation is not so well in hand this year, just wait till next year.

Cannot Replace Topdressing

Nor must it be forgotten that the treatment of greens by liquids, however good, can never displace entirely the old reliable topdressing. Sand and soil are essential to the production of a good putting surface and the elimination of unevennesses. And since topdressing must be applied it is a simple matter to include solid fertilizers, the effect of which does not depend too much upon a delicately balanced condition of temperature and moisture.

Liquid fertilizers have their place, of course. Unexpected tournaments may demand the use of a grass stimulant which will not leave annoying debris. It is in this connection that vitamin B₁ may be useful, and studies are now being con-

ducted in which it is being combined with various liquid fertilizers. Such plant foods and stimulants properly blended may be of more value to the greenkeeper than vitamin B₁ alone. Our own experiments are being conducted along the line of incorporating with each gallon of a water-soluble, 8-8-5 fertilizer, one milligram of vitamin B₁. At present our distributors are set so that the turf receives 200 gallons of water to every gallon of stock solution. Results will be observed during both warm and dry, and cold and wet periods.

Physical Requirements Still Unknown

Vitamin B₁ should be given every opportunity to prove itself, but one must not be too enthusiastic about its possibilities. At this stage in its development it is difficult to say with certainty what physical conditions are required to get the best results, or any results at all. At the California Institute of Technology every experiment is under as perfect control as is humanly possible. Water, soil, bottom heat, humidity, and atmospheric temperature can be regulated and the consequent results carefully noted. Such conditions of control are manifestly impossible on a golf course, so it may be a long time before optimum conditions are determined. Even nurserymen, whose plants are more amenable to control than golf turf, are not unanimous in their opinion as to the value of the vitamin.

Very pointed words are the following taken from a letter from J. P. Bennet, associate professor of plant pathology at the University of California: ". . . It [a press notice] was merely a warning to the public to be a little skeptical about the claims being made for vitamin B₁ by those engaged in promoting its sale. Many of these claims are extravagant to say the least. My conservatism is based on a few observations and on what the men at the California Institute of Technology are willing to say. So little has been done in finding out whether or not different plants on various soils will respond to applications of vitamin B₁ that it seems better to wait until reliable tests can be made before recommending its use. However, the salesmen and the public do not want to wait, so we are having a lot of money spent and many reports that may or may not be of value.

"As you know this thing has been going only a few months. It takes time to

get reliable information and most of the experiment stations have not had a chance to do anything on it. I have no doubt that several experiment stations are doing some work on this but it will be some time before they will be willing to publish anything. I am doing a little on it but so far have no positive results to report.

"Vitamin B₁ may be useful for some or even many plants but we do not have the information to enable us to say so. Since the plant manufactures B₁ in its leaves it ought to be able to supply its own needs. But it still may be able to utilize more than its own leaves supply, especially if it is not growing under the best conditions."

Little need be added to what Professor Bennett has said. While we hesitate to cast cold water upon anything which may at some time ease the woes of the green-keeper we cannot help but feel that the guardian of tee and green must still rely largely upon the barnyard's most obvious product and a lot of hard work to produce playable turf. The day may be approaching—vitamin B₁ may be the beginning—when more reliance can be placed upon the test tube than upon the compost pile. But not yet awhile, my friends, not yet.

Jolly Reports Record Golf Year in South

JACK JOLLY, Colonel golf ball chief, points out that golf got a good start on a record year despite the cold weather in the south. Cold sharply reduced swimming and fishing at the southern resorts and generally directed the swimmers and fishermen toward the golf courses.

Jack notes the market promotion activities of foresighted pros as keeping pro golf apace with progress. Longer life of equipment, an inevitable development of modern business and sport, requires that a larger market be created lest the pro income be seriously diminished, Jolly comments. Attention that pros have been giving to increasing the number of golfers already is beginning to show definite promise of larger earnings for professionals, he says. The Colonel ball business has been especially good for early season. Jack is pushing sales from his headquarters at 872 Broadway, Newark, N. J.

IT'S ON THE HOUSE

By **TOM BEAM**
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We get out of life what we put into it. The sentence can be given club business significance by substituting the word "club" for the word "life."

Just as one may have an exaggerated opinion of one's self, so it may be that one has an exaggerated opinion of one's club.

In a well run club things aren't done on the run.

A man must be a manager in the making for many years before he becomes a successful club manager.

There's quite a difference between having ideas as to how things might be run better, and enthusiastically submitting an idea for such improvement.

Too bad it so often takes the shock of losing a job to make us appreciate what a good job it was.

Being cordial to new ideas is as important as being cordial to members.

The employee who thinks, "Let 'em wait," is sooner or later replaced by one who doesn't think such unclub-like thoughts.

Let's get this straight—the lonely member seeks out somebody to talk to; not somebody to listen to.

A club is best run for profit by running it for the comfort of the members.

Norway, Me., Got Golf In '26.—Ray Evers, Supt. at the Reddy Tee Co. plant at Norway, Me., brought golf to Norway in 1926. Bill Lowell, Jr., of the company, got Ray in a vacant lot slamming balls. Evers then bought clubs and played at Poland Springs 25 miles away. Three other Norway residents joined Evers and a 9-hole course was laid out through an orchard. The next year the club had grown to about 30 players. They organized the Norway CC, with a \$6,000 investment, and had George Dunn build them a fine little 9-hole course. The town's been strong for golf ever since.